

atg gca gaa tct ttt ttt tct gat ttt ggc ttg ttg tgg tat ctg aag	48
Met Ala Glu Ser Phe Phe Ser Asp Phe Gly Leu Leu Trp Tyr Leu Lys	
1 5 10 15	
gag ctc aga aag gaa gag ttt tgg aaa ttt aag gag ctc ctc aaa caa	96
Glu Leu Arg Lys Glu Glu Phe Trp Lys Phe Lys Glu Leu Leu Lys Gln	
20 25 30	
cct ttg gag aaa ttt gaa ctc aag cca atc ccc tgg gct gag ctg aag	144
Pro Leu Glu Lys Phe Glu Leu Lys Pro Ile Pro Trp Ala Glu Leu Lys	
35 40 45	
aag gcc tcc aaa gaa gat gta gca aag ctg ctg gac aaa cat tac cca	192
Lys Ala Ser Lys Glu Asp Val Ala Lys Leu Leu Asp Lys His Tyr Pro	
50 55 60	
gga aag cag gca tgg gag gta aca ctg aac ctg ttt cta cag atc aat	240
Gly Lys Gln Ala Trp Glu Val Thr Leu Asn Leu Phe Leu Gln Ile Asn	
65 70 75 80	
agg aaa gat ctc tgg aca aag gct cag gaa gag atg aga aat aag cta	288
Arg Lys Asp Leu Trp Thr Lys Ala Gln Glu Glu Met Arg Asn Lys Leu	
85 90 95	
aac cca tac aga aag cat atg aag gaa aca ttt caa ctc ata tgg gag	336
Asn Pro Tyr Arg Lys His Met Lys Glu Thr Phe Gln Leu Ile Trp Glu	
100 105 110	
aag gaa acc tgt ctt cac gtc cct gag cat ttc tac aaa gaa acc atg	384
Lys Glu Thr Cys Leu His Val Pro Glu His Phe Tyr Lys Glu Thr Met	
115 120 125	
aaa aat gag tat aaa gaa ttg aat gac gca tat act gct gcg gct aga	432
Lys Asn Glu Tyr Lys Glu Leu Asn Asp Ala Tyr Thr Ala Ala Ala Arg	
130 135 140	
cga cac act gtg gtc ctg gaa ggt cct gat gga att gga aaa aca acc	480
Arg His Thr Val Val Leu Glu Gly Pro Asp Gly Ile Gly Lys Thr Thr	
145 150 155 160	
ctt tta aga aaa gtg atg ttg gac tgg gca gag gga aac tta tgg aag	528
Leu Leu Arg Lys Val Met Leu Asp Trp Ala Glu Gly Asn Leu Trp Lys	
165 170 175	
gac agt tac aat gag aag ctc gtc tac tgg cgg gag ctt tgc tca atg	576
Asp Ser Tyr Asn Glu Lys Leu Val Tyr Trp Arg Glu Leu Cys Ser Met	
180 185 190	
ttc att acc aac aag aac ttc cag att tta gac atg gaa aat acc agc	624
Phe Ile Thr Asn Lys Asn Phe Gln Ile Leu Asp Met Glu Asn Thr Ser	
195 200 205	

Fig. 1A

ctc gat gat ccc tcc ctg gcg att ctt tgc aaa gcg ctg gct cag cct Leu Asp Asp Pro Ser Leu Ala Ile Leu Cys Lys Ala Leu Ala Gln Pro 210 215 220	672
gtt tgt aaa ctc cga aaa ctc ata ttt act tct gtg tac ttt gga cat Val Cys Lys Leu Arg Lys Leu Ile Phe Thr Ser Val Tyr Phe Gly His 225 230 235 240	720
gat tca gaa tta ttt aag gca gtt ctt cac aac cct cat ctg aaa ctt Asp Ser Glu Leu Phe Lys Ala Val Leu His Asn Pro His Leu Lys Leu 245 250 255	768
ctg agc ctg tac ggc act agc ctc tcc cag tct gac atc aga cac ctg Leu Ser Leu Tyr Gly Thr Ser Leu Ser Gln Ser Asp Ile Arg His Leu 260 265 270	816
tgt gag acg ctg aaa cat cca atg tgc aag ata gaa gag ctg ata ctg Cys Glu Thr Leu Lys His Pro Met Cys Lys Ile Glu Glu Leu Ile Leu 275 280 285	864
gga aag tgt gac atc tcc agt gaa gtt tgt gaa gac atc gcc tcc gtc Gly Lys Cys Asp Ile Ser Ser Glu Val Cys Glu Asp Ile Ala Ser Val 290 295 300	912
ctg gcc tgc aac agc aag ctg aaa cac ctc tcc ttg gta gaa aat ccc Leu Ala Cys Asn Ser Lys Leu Lys His Leu Ser Leu Val Glu Asn Pro 305 310 315 320	960
ttg agg gac gaa gga atg acg ttg ctg tgt gaa gcc ctg aag cac tca Leu Arg Asp Glu Gly Met Thr Leu Leu Cys Glu Ala Leu Lys His Ser 325 330 335	1008
cac tgt gcc ctg gag agg ctg atg ttg atg ggc tgt ttc ctt act tcc His Cys Ala Leu Glu Arg Leu Met Leu Met Gly Cys Phe Leu Thr Ser 340 345 350	1056
gat tcc tgt aag gac att gct gct gtt ctt att tgc aat ggg aaa ctg Asp Ser Cys Lys Asp Ile Ala Val Leu Ile Cys Asn Gly Lys Leu 355 360 365	1104
aag acc ctg aaa ctt ggg cat aat gaa ata gga gac act ggt gtc aga Lys Thr Leu Lys Leu Gly His Asn Glu Ile Gly Asp Thr Gly Val Arg 370 375 380	1152
cag tta tgt gca gct ttg cag cat cct cac tgt aaa tta gag tgt ctc Gln Leu Cys Ala Ala Leu Gln His Pro His Cys Lys Leu Glu Cys Leu 385 390 395 400	1200
ggg ctg caa acg tgt ccg atc acc cgt gcc tgc tgc gac gac atc gcc Gly Leu Gln Thr Cys Pro Ile Thr Arg Ala Cys Cys Asp Asp Ile Ala 405 410 415	1248

Fig. 1B

gca gca ctc atc gcc tgc aaa aca ctg agg agc ctg aac ctc gac tgg	1296
Ala Ala Leu Ile Ala Cys Lys Thr Leu Arg Ser Leu Asn Leu Asp Trp	
420 425 430	
att gcc ttg gat gct gat gca gtg gtg gtg ctg tgt gag gca ttg agc	1344
Ile Ala Leu Asp Ala Asp Ala Val Val Val Leu Cys Glu Ala Leu Ser	
435 440 445	
cac ccg gac tgt gcc ctg cag atg ctg ggg ctg cac aaa tct ggc ttt	1392
His Pro Asp Cys Ala Leu Gln Met Leu Gly Leu His Lys Ser Gly Phe	
450 455 460	
gat gaa gaa act cag aag atc ctg atg tct gtg gaa gaa aaa att ccc	1440
Asp Glu Glu Thr Gln Lys Ile Leu Met Ser Val Glu Glu Lys Ile Pro	
465 470 475 480	
cat ctg acc att tca cat gga cct tgg att gac gag gaa tac aag atc	1488
His Leu Thr Ile Ser His Gly Pro Trp Ile Asp Glu Glu Tyr Lys Ile	
485 490 495	
agg ggt gtg ctc ctc tga	1506
Arg Gly Val Leu Leu *	
500	

Fig. 1C

atg gca gcc tct ttc ttc tct gat ttt ggt ctt atg tgg tat ctg gag	48
Met Ala Ala Ser Phe Phe Ser Asp Phe Gly Leu Met Trp Tyr Leu Glu	
1 5 10 15	
gag ctc aaa aag gag gag ttc agg aaa ttt aaa gaa cat ctc aag caa	96
Glu Leu Lys Lys Glu Glu Phe Arg Lys Phe Lys Glu His Leu Lys Gln	
20 25 30	
atg act ttg cag ctt gaa ctc aag cag att ccc tgg act gag gtc aaa	144
Met Thr Leu Gln Leu Glu Leu Lys Gln Ile Pro Trp Thr Glu Val Lys	
35 40 45	
aaa gca tcc cgg gaa gaa ctt gca aac ctc ttg atc aag cac tat gaa	192
Lys Ala Ser Arg Glu Glu Leu Ala Asn Leu Leu Ile Lys His Tyr Glu	
50 55 60	
gaa caa caa gct tgg aac ata acc tta aga atc ttt caa aag atg gat	240
Glu Gln Gln Ala Trp Asn Ile Thr Leu Arg Ile Phe Gln Lys Met Asp	
65 70 75 80	
aga aag gat ctc tgc atg aag gtc atg agg gag aga aca ggt gag gga	288
Arg Lys Asp Leu Cys Met Lys Val Met Arg Glu Arg Thr Gly Glu Gly	
85 90 95	
gtc tgg gaa ggg gga agc ctt ctt ata atg agg act atg tcc taa	333
Val Trp Glu Gly Gly Ser Leu Leu Ile Met Arg Thr Met Ser *	
100 105 110	

Fig. 2

atg Met 1	gaa Glu	gga Gly	gac Asp	aaa Lys 5	tcg Ser	ctc Leu	acc Thr	ttt Phe	tcc Ser 10	agc Ser	tac Tyr	ggg Gly	ctg Leu	caa Gln 15	tgg Trp	48
tgt Cys	ctc Leu	tat Tyr	gag Glu 20	cta Leu	gac Asp	aag Lys	gaa Glu	gaa Glu 25	ttt Phe	cag Gln	aca Thr	ttc Phe	aag Lys 30	gaa Glu	tta Leu	96
cta Leu	aag Lys	aag Lys 35	aaa Lys	tct Ser	tca Ser	gaa Glu	tcg Ser 40	acc Thr	aca Thr	tgc Cys	tct Ser	att Ile 45	cca Pro	cag Gln	ttt Phe	144
gaa Glu	atc Ile 50	gag Glu	aat Asn	gcc Ala	aac Asn	gtg Val 55	gaa Glu	tgt Cys	ctg Leu	gca Ala	ctc Leu 60	ctc Leu	ttg Leu	cat His	gag Glu	192
tat Tyr 65	tat Tyr	gga Gly	gca Ala	tcg Ser	ctg Leu 70	gcc Ala	tgg Trp	gct Ala	acg Thr 75	tcc Ser	att Ile	agc Ser	atc Ile	ttt Phe	gaa Glu 80	240
aac Asn	atg Met	aac Asn	ctg Leu	cga Arg 85	acc Thr	ctc Leu	tcg Ser	gag Glu	aag Lys 90	gca Ala	cgg Arg	gat Asp	gac Asp	atg Met 95	aaa Lys	288
aaa Lys	att Ile	tca Ser	caa Gln 100	gct Ala	atg Met	gaa Glu	caa Gln	gaa Glu 105	ggt Gly	gcc Ala	aca Thr	gca Ala 110	gca Ala	gag Glu	aca Thr	336
gaa Glu	gaa Glu	caa Gln 115	gaa Glu	att Ile	tca Ser	caa Gln	gct Ala 120	atg Met	gaa Glu	caa Gln	gaa Glu 125	ggt Gly	gcc Ala	aca Thr	gca Ala	384
gca Ala 130	gag Glu	aca Thr	gaa Glu	gaa Glu	caa Gln	gga Gly 135	cat His	gga Gly	ggt Gly	gac Asp	aca Thr 140	tgg Trp	gac Asp	tac Tyr	aag Lys	432
agt Ser 145	cac His	gtg Val	atg Met	acc Thr	aaa Lys 150	ttc Phe	gct Ala	gag Glu	gag Glu	gag Glu 155	gat Asp	gta Val	cgt Arg	cgt Arg	agt Ser 160	480
ttt Phe	gaa Glu	aac Asn	act Thr	gct Ala 165	gct Ala	gac Asp	tgg Trp	ccg Pro	gaa Glu 170	atg Met	caa Gln	acg Thr	ttg Leu	gct Ala 175	ggt Gly	528
gct Ala	ttt Phe	gat Asp	tca Ser 180	gac Asp	cgg Arg	tgg Trp	ggc Gly	ttc Phe 185	cgg Arg	cct Pro	cgc Arg	acg Thr 190	gtg Val	ggt Val	ctg Leu	576
cac His	gga Gly	aag Lys 195	tca Ser	gga Gly	att Ile	ggg Gly	aaa Lys 200	tcg Ser	gct Ala	cta Leu	gcc Ala	aga Arg 205	agg Arg	atc Ile	gtg Val	624

Fig. 3A

ctg tgc tgg gcg caa ggt gga ctc tac cag gga atg ttc tcc tac gtc Leu Cys Trp Ala Gln Gly Gly Leu Tyr Gln Gly Met Phe Ser Tyr Val 210 215 220	672
ttc ttc ctc ccc gtt aga gag atg cag cgg aag aag gag agc agt gtc Phe Phe Leu Pro Val Arg Glu Met Gln Arg Lys Lys Glu Ser Ser Val 225 230 235 240	720
aca gag ttc atc tcc agg gag tgg cca gac tcc cag gct ccg gtg acg Thr Glu Phe Ile Ser Arg Glu Trp Pro Asp Ser Gln Ala Pro Val Thr 245 250 255	768
gag atc atg tcc cga cca gaa agg ctg ttg ttc atc att gac ggt ttc Glu Ile Met Ser Arg Pro Glu Arg Leu Leu Phe Ile Ile Asp Gly Phe 260 265 270	816
gat gac ctg ggc tct gtc ctc aac aat gac aca aag ctc tgc aaa gac Asp Asp Leu Gly Ser Val Leu Asn Asn Asp Thr Lys Leu Cys Lys Asp 275 280 285	864
tgg gct gag aag cag cct ccg ttc acc ctc ata cgc agt ctg ctg agg Trp Ala Glu Lys Gln Pro Phe Thr Leu Ile Arg Ser Leu Leu Arg 290 295 300	912
aag gtc ctg ctc cct gag tcc ttc ctg atc gtc acc gtc aga gac gtg Lys Val Leu Leu Pro Glu Ser Phe Leu Ile Val Thr Val Arg Asp Val 305 310 315 320	960
ggc aca gag aag ctc aag tca gag gtc gtg tct ccc cgt tac ctg tta Gly Thr Glu Lys Leu Lys Ser Glu Val Val Ser Pro Arg Tyr Leu Leu 325 330 335	1008
gtt aga gga atc tcc ggg gaa caa aga atc cac ttg ctc ctt gag cgc Val Arg Gly Ile Ser Gly Glu Gln Arg Ile His Leu Leu Leu Glu Arg 340 345 350	1056
ggg att ggt gag cat cag aag aca caa ggg ttg cgt gcg atc atg aac Gly Ile Gly Glu His Gln Lys Thr Gln Gly Leu Arg Ala Ile Met Asn 355 360 365	1104
aac cgt gag ctg ctc gac cag tgc cag gtg ccc gcc gtg ggc tct ctc Asn Arg Glu Leu Leu Asp Gln Cys Gln Val Pro Ala Val Gly Ser Leu 370 375 380	1152
atc tgc gtg gcc ctg cag ctg cag gac gtg gtg ggg gag agc gtc gcc Ile Cys Val Ala Leu Gln Leu Gln Asp Val Val Gly Glu Ser Val Ala 385 390 395 400	1200
ccc ttc aac caa acg ctc aca ggc ctg cac gcc gct ttt gtg ttt cat Pro Phe Asn Gln Thr Leu Thr Gly Leu His Ala Ala Phe Val Phe His 405 410 415	1248

Fig. 3B

cag ctc acc cct cga ggc gtg gtc cgg cgc tgt ctc aat ctg gag gaa	1296
Gln Leu Thr Pro Arg Gly Val Val Arg Arg Cys Leu Asn Leu Glu Glu	
420 425 430	
aga gtt gtc ctg aag cgc ttc tgc cgt atg gct gtg gag gga gtg tgg	1344
Arg Val Val Leu Lys Arg Phe Cys Arg Met Ala Val Glu Gly Val Trp	
435 440 445	
aat agg aag tca gtg ttt gat ggt gac gac ctc atg gtt caa gga ctc	1392
Asn Arg Lys Ser Val Phe Asp Gly Asp Asp Leu Met Val Gln Gly Leu	
450 455 460	
ggg gag tct gag ctc cgt gct ctg ttt cac atg aac atc ctt ctc cca	1440
Gly Glu Ser Glu Leu Arg Ala Leu Phe His Met Asn Ile Leu Leu Pro	
465 470 475 480	
gac agc cac tgt gag gag tac tac acc ttc ttc cac ctc agt ctc cag	1488
Asp Ser His Cys Glu Glu Tyr Tyr Thr Phe Phe His Leu Ser Leu Gln	
485 490 495	
gac ttc tgt gcc gcc ttg tac tac gtg tta gag ggc ctg gaa atc gag	1536
Asp Phe Cys Ala Ala Leu Tyr Tyr Val Leu Glu Gly Leu Glu Ile Glu	
500 505 510	
cca gct ctc tgc cct ctg tac gtt gag aag aca aag agg tcc atg gag	1584
Pro Ala Leu Cys Pro Leu Tyr Val Glu Lys Thr Lys Arg Ser Met Glu	
515 520 525	
ctt aaa cag gca ggc ttc cat atc cac tcg ctt tgg atg aag cgt ttc	1632
Leu Lys Gln Ala Gly Phe His Ile His Ser Leu Trp Met Lys Arg Phe	
530 535 540	
ttg ttt ggc ctc gtg agc gaa gac gta agg agg cca ctg gag gtc ctg	1680
Leu Phe Gly Leu Val Ser Glu Asp Val Arg Arg Pro Leu Glu Val Leu	
545 550 555 560	
ctg ggc tgt ccc gtt ccc ctg ggg gtg aag cag aag ctt ctg cac tgg	1728
Leu Gly Cys Pro Val Pro Leu Gly Val Lys Gln Lys Leu Leu His Trp	
565 570 575	
gtc tct ctg ttg ggt cag cag cct aat gcc acc acc cca gga gac acc	1776
Val Ser Leu Leu Gly Gln Gln Pro Asn Ala Thr Thr Pro Gly Asp Thr	
580 585 590	
ctg gac gcc ttc cac tgt ctt ttc gag act caa gac aaa gag ttt gtt	1824
Leu Asp Ala Phe His Cys Leu Phe Glu Thr Gln Asp Lys Glu Phe Val	
595 600 605	
cgc ttg gca tta aac agc ttc caa gaa gtg tgg ctt ccg att aac cag	1872
Arg Leu Ala Leu Asn Ser Phe Gln Glu Val Trp Leu Pro Ile Asn Gln	
610 615 620	

Fig. 3C

aac ctg gac ttg ata gca tct tcc ttc tgc ctc cag cac tgt ccg tat	1920
Asn Leu Asp Leu Ile Ala Ser Ser Phe Cys Leu Gln His Cys Pro Tyr	
625 630 635 640	
ttg cgg aaa att cgg gtg gat gtc aaa ggg atc ttc cca aga gat gag	1968
Leu Arg Lys Ile Arg Val Asp Val Lys Gly Ile Phe Pro Arg Asp Glu	
645 650 655	
tcc gct gag gca tgt cct gtg gtc cct cta tgg atg cgg gat aag acc	2016
Ser Ala Glu Ala Cys Pro Val Val Pro Leu Trp Met Arg Asp Lys Thr	
660 665 670	
ctc att gag gag cag tgg gaa gat ttc tgc tcc atg ctt ggc acc cac	2064
Leu Ile Glu Glu Gln Trp Glu Asp Phe Cys Ser Met Leu Gly Thr His	
675 680 685	
cca cac ctg cgg cag ctg gac ctg ggc agc agc atc ctg aca gag cgg	2112
Pro His Leu Arg Gln Leu Asp Leu Gly Ser Ser Ile Leu Thr Glu Arg	
690 695 700	
gcc atg aag acc ctg tgt gcc aag ctg agg cat ccc acc tgc aag ata	2160
Ala Met Lys Thr Leu Cys Ala Lys Leu Arg His Pro Thr Cys Lys Ile	
705 710 715 720	
cag acc ctg atg ttt aga aat gca cag att acc cct ggt gtg cag cac	2208
Gln Thr Leu Met Phe Arg Asn Ala Gln Ile Thr Pro Gly Val Gln His	
725 730 735	
ctc tgg aga atc gtc atg gcc aac cgt aac cta aga tcc ctc aac ttg	2256
Leu Trp Arg Ile Val Met Ala Asn Arg Asn Leu Arg Ser Leu Asn Leu	
740 745 750	
gga ggc acc cac ctg aag gaa gag gat gta agg atg gcg tgt gaa gcc	2304
Gly Gly Thr His Leu Lys Glu Glu Asp Val Arg Met Ala Cys Glu Ala	
755 760 765	
tta aaa cac cca aaa tgt ttg ttg gag tct ttg agg ctg gat tgc tgt	2352
Leu Lys His Pro Lys Cys Leu Leu Glu Ser Leu Arg Leu Asp Cys Cys	
770 775 780	
gga ttg acc cat gcc tgt tac ctg aag atc tcc caa atc ctt acg acc	2400
Gly Leu Thr His Ala Cys Tyr Leu Lys Ile Ser Gln Ile Leu Thr Thr	
785 790 795 800	
tcc ccc agc ctg aaa tct ctg agc ctg gca gga aac aag gtg aca gac	2448
Ser Pro Ser Leu Lys Ser Leu Ser Leu Ala Gly Asn Lys Val Thr Asp	
805 810 815	
cag gga gta atg cct ctc agt gat gcc ttg aga gtc tcc cag tgc gcc	2496
Gln Gly Val Met Pro Leu Ser Asp Ala Leu Arg Val Ser Gln Cys Ala	
820 825 830	

Fig. 3D



ctg cag aag ctg ata ctg gag gac tgt ggc atc aca gcc acg ggt tgc	2544
Leu Gln Lys Leu Ile Leu Glu Asp Cys Gly Ile Thr Ala Thr Gly Cys	
835 840 845	
cag agt ctg gcc tca gcc ctc gtc agc aac cgg agc ttg aca cac ctg	2592
Gln Ser Leu Ala Ser Ala Leu Val Ser Asn Arg Ser Leu Thr His Leu	
850 855 860	
tgc cta tcc aac aac agc ctg ggg aac gaa ggt gta aat cta ctg tgt	2640
Cys Leu Ser Asn Asn Ser Leu Gly Asn Glu Gly Val Asn Leu Leu Cys	
865 870 875 880	
cga tcc atg agg ctt ccc cac tgt agt ctg cag agg ctg atg ctg aat	2688
Arg Ser Met Arg Leu Pro His Cys Ser Leu Gln Arg Leu Met Leu Asn	
885 890 895	
cag tgc cac ctg gac acg gct ggc tgt ggt ttt ctt gca ctt gcg ctt	2736
Gln Cys His Leu Asp Thr Ala Gly Cys Gly Phe Leu Ala Leu Ala Leu	
900 905 910	
atg ggt aac tca tgg ctg acg cac ctg agc ctt agc atg aac cct gtg	2784
Met Gly Asn Ser Trp Leu Thr His Leu Ser Leu Ser Met Asn Pro Val	
915 920 925	
gaa gac aat ggc gtg aag ctt ctg tgc gag gtc atg aga gaa cca tct	2832
Glu Asp Asn Gly Val Lys Leu Leu Cys Glu Val Met Arg Glu Pro Ser	
930 935 940	
tgt cat ctc cag gac ctg gag ttg gta aag tgt cat ctc acc gcc gcg	2880
Cys His Leu Gln Asp Leu Glu Leu Val Lys Cys His Leu Thr Ala Ala	
945 950 955 960	
tgc tgt gag agt ctg tcc tgt gtg atc tcg agg agc aga cac ctg aag	2928
Cys Cys Glu Ser Leu Ser Cys Val Ile Ser Arg Ser Arg His Leu Lys	
965 970 975	
agc ctg gat ctc acg gac aat gcc ctg ggt gac ggt ggg gtt gct gcg	2976
Ser Leu Asp Leu Thr Asp Asn Ala Leu Gly Asp Gly Gly Val Ala Ala	
980 985 990	
ctg tgc gag gga ctg aag caa aag aac agt gtt ctg acg aga ctc ggg	3024
Leu Cys Glu Gly Leu Lys Gln Lys Asn Ser Val Leu Thr Arg Leu Gly	
995 1000 1005	
ttg aag gca tgt gga ctg act tct gat tgc tgt gag gca ctc tcc ttg	3072
Leu Lys Ala Cys Gly Leu Thr Ser Asp Cys Cys Glu Ala Leu Ser Leu	
1010 1015 1020	
gcc ctt tcc tgc aac cgg cat ctg acc agt cta aac ctg gtg cag aat	3120
Ala Leu Ser Cys Asn Arg His Leu Thr Ser Leu Asn Leu Val Gln Asn	
1025 1030 1035 1040	

Fig. 3E

aac ttc agt ccc aaa gga atg atg aag ctg tgt tcg gcc ttt gcc tgt	3168
Asn Phe Ser Pro Lys Gly Met Met Lys Leu Cys Ser Ala Phe Ala Cys	
1045 1050 1055	
ccc acg tct aac tta cag ata att ggg ctg tgg aaa tgg cag tac cct	3216
Pro Thr Ser Asn Leu Gln Ile Ile Gly Leu Trp Lys Trp Gln Tyr Pro	
1060 1065 1070	
gtg caa ata agg aag ctg ctg gag gaa gtg cag cta ctc aag ccc cga	3264
Val Gln Ile Arg Lys Leu Leu Glu Glu Val Gln Leu Leu Lys Pro Arg	
1075 1080 1085	
gtc gta att gac ggt agt tgg cat tct ttt gat gaa gat gac cga cac	3312
Val Val Ile Asp Gly Ser Trp His Ser Phe Asp Glu Asp Asp Arg His	
1090 1095 1100	
aaa ata gga ctt act ttc cgg ctc cct gaa agc cgg gca tgg cca tgt	3360
Lys Ile Gly Leu Thr Phe Arg Leu Pro Glu Ser Arg Ala Trp Pro Cys	
1105 1110 1115 1120	
gcc ttg ctg tgg ggg atg aac cca gag cag aag aag cgt gtg tcg ctt	3408
Ala Leu Leu Trp Gly Met Asn Pro Glu Gln Lys Lys Arg Val Ser Leu	
1125 1130 1135	
ctg gct gga gac ttc aag agc agt aca cga ttt gcc aag tct ctc tgc	3456
Leu Ala Gly Asp Phe Lys Ser Ser Thr Arg Phe Ala Lys Ser Leu Cys	
1140 1145 1150	
ctg gcc acg gca aat ggt gag tcc cag aga gtt gac aac gtg gag cag	3504
Leu Ala Thr Ala Asn Gly Glu Ser Gln Arg Val Asp Asn Val Glu Gln	
1155 1160 1165	
agc tcc ccg caa ccc atg gca ggc acg gaa cac aaa caa gat aaa atg	3552
Ser Ser Pro Gln Pro Met Ala Gly Thr Glu His Lys Gln Asp Lys Met	
1170 1175 1180	
ttg agt gtt gga tat tcc gga gcc tgg tct gaa act gct gag ctc gaa	3600
Leu Ser Val Gly Tyr Ser Gly Ala Trp Ser Glu Thr Ala Glu Leu Glu	
1185 1190 1195 1200	
ggg ctt gga tcc aac agt gct gat cat gac cac gga ggt atg gcc tgg	3648
Gly Leu Gly Ser Asn Ser Ala Asp His Asp His Gly Gly Met Ala Trp	
1205 1210 1215	
tca cta ggg aga gag ctg agc tcg agg ggc ttg tgt cca aca gtg ctg	3696
Ser Leu Gly Arg Glu Leu Ser Ser Arg Gly Leu Cys Pro Thr Val Leu	
1220 1225 1230	
atg acc aca gcg gtg tgt cct ggt cac tgg gag cgg ctg ggc tct agg	3744
Met Thr Thr Ala Val Cys Pro Gly His Trp Glu Arg Leu Gly Ser Arg	
1235 1240 1245	

Fig. 3F

ggc tgg tgt ctt aac agt gct gat gac cac agc ggt gtg tcc tgg tca	3792
Gly Trp Cys Leu Asn Ser Ala Asp Asp His Ser Gly Val Ser Trp Ser	
1250 1255 1260	
ctg gga gcg gct ggg ctc gag ggg ctt gtg tcc aac agt gct gat gac	3840
Leu Gly Ala Ala Gly Leu Glu Gly Leu Val Ser Asn Ser Ala Asp Asp	
1265 1270 1275 1280	
cac agc ggt gtg gcc tgg tca ctg gga gcg gct ggg ctc gag ggg ctt	3888
His Ser Gly Val Ala Trp Ser Leu Gly Ala Ala Gly Leu Glu Gly Leu	
1285 1290 1295	
gtg tcc aac agt gct gat gac cac agc ggt gtg tcc tgg tca ctg gga	3936
Val Ser Asn Ser Ala Asp Asp His Ser Gly Val Ser Trp Ser Leu Gly	
1300 1305 1310	
gcg gct ggg ctc gag ggg ctt gtg tcc aac agt gct gat gac cac agc	3984
Ala Ala Gly Leu Glu Gly Leu Val Ser Asn Ser Ala Asp Asp His Ser	
1315 1320 1325	
ggt gtg tcc tgg tca ctg gga gcg gct ggg ctc gag ggg ctg gtg tct	4032
Gly Val Ser Trp Ser Leu Gly Ala Ala Gly Leu Glu Gly Leu Val Ser	
1330 1335 1340	
taa	4035
*	

Fig. 3G

atg gca tct tct gca gag ctg gac ttc aac ctg cag gct ctt ctg gag	48
Met Ala Ser Ser Ala Glu Leu Asp Phe Asn Leu Gln Ala Leu Leu Glu	
1 5 10 15	
cag ctc agc cag gat gag ttg agc aag ttc aag tct ctg atc aga aca	96
Gln Leu Ser Gln Asp Glu Leu Ser Lys Phe Lys Ser Leu Ile Arg Thr	
20 25 30	
atc tcc ctg gga aag gag cta cag acc gtc ccc cag aca gag gta gac	144
Ile Ser Leu Gly Lys Glu Leu Gln Thr Val Pro Gln Thr Glu Val Asp	
35 40 45	
aag gct aat ggg aag caa ctg gta gaa atc ttc acc agc cac tcc tgc	192
Lys Ala Asn Gly Lys Gln Leu Val Glu Ile Phe Thr Ser His Ser Cys	
50 55 60	
agc tac tgg gca ggg atg gca gcc atc cag gtc ttt gaa aag atg aat	240
Ser Tyr Trp Ala Gly Met Ala Ala Ile Gln Val Phe Glu Lys Met Asn	
65 70 75 80	
cga acg cat ctg tct ggg aga gct gat gaa cac tgt gtg atg ccc cca	288
Arg Thr His Leu Ser Gly Arg Ala Asp Glu His Cys Val Met Pro Pro	
85 90 95	
cct taa	294
Pro *	

Fig. 4



atg gcc atg gcc aag gcc aga aag ccc cgg gag gca ttg ctc tgg gcc	48
Met Ala Met Ala Lys Ala Arg Lys Pro Arg Glu Ala Leu Leu Trp Ala	
1 5 10 15	
ttg agt gac ctt gag gag aac gat ttc aag aag tta aag ttc tac tta	96
Leu Ser Asp Leu Glu Glu Asn Asp Phe Lys Lys Leu Lys Phe Tyr Leu	
20 25 30	
cgg gat atg acc ctg tct gag ggc cag ccc cca ctg gcc aga ggg gag	144
Arg Asp Met Thr Leu Ser Glu Gly Gln Pro Pro Leu Ala Arg Gly Glu	
35 40 45	
ttg gag ggc ctg att ccg gtg gac ctg gca gaa tta ctg att tca aag	192
Leu Glu Gly Leu Ile Pro Val Asp Leu Ala Glu Leu Leu Ile Ser Lys	
50 55 60	
tat gga gaa aag gag gct gtg aaa gtt gtc ctc aag ggc ttg aag gtc	240
Tyr Gly Glu Lys Glu Ala Val Lys Val Val Leu Lys Gly Leu Lys Val	
65 70 75 80	
atg aac ctg ttg gaa ctt gtg gac cag ctc agc cat att tgt ctg cat	288
Met Asn Leu Leu Glu Leu Val Asp Gln Leu Ser His Ile Cys Leu His	
85 90 95	
gat tac aga gaa gta tac cga gag cat gtg cgc tgc cta gag gaa tgg	336
Asp Tyr Arg Glu Val Tyr Arg Glu His Val Arg Cys Leu Glu Glu Trp	
100 105 110	
cag gaa gca gga gtc aat ggc aga tac aac cag gtg ctc ctg gtg gcc	384
Gln Glu Ala Gly Val Asn Gly Arg Tyr Asn Gln Val Leu Leu Val Ala	
115 120 125	
aag ccc agc tca gag agc cca gaa tca ctt gcc tgc ccc ttc ccg gag	432
Lys Pro Ser Ser Glu Ser Pro Glu Ser Leu Ala Cys Pro Phe Pro Glu	
130 135 140	
cag gag ctg gag tct gtc acg gtg gag gct cta ttt gat tca ggg gaa	480
Gln Glu Leu Glu Ser Val Thr Val Glu Ala Leu Phe Asp Ser Gly Glu	
145 150 155 160	
aag ccc tca ctg gcc cca tcc tta gtt gtg cta cag ggg tcg gct ggc	528
Lys Pro Ser Leu Ala Pro Ser Leu Val Val Leu Gln Gly Ser Ala Gly	
165 170 175	
act gga aag aca act ctc gcc aga aaa atg gtg ttg gac tgg gcc acc	576
Thr Gly Lys Thr Thr Leu Ala Arg Lys Met Val Leu Asp Trp Ala Thr	
180 185 190	
ggg act ctg tac cca ggc cgg ttt gat tat gtc ttt tat gta agc tgc	624
Gly Thr Leu Tyr Pro Gly Arg Phe Asp Tyr Val Phe Tyr Val Ser Cys	
195 200 205	

Fig. 6A



goa gct gaa ggg att cag cac cag agg ttc cta ttt gaa gaa gct gag	1296
Ala Ala Glu Gly Ile Gln His Gln Arg Phe Leu Phe Glu Glu Ala Glu	
420 425 430	
ctc agg aaa cat aat tta gat ggc ccc agg ctt gcc gct ttc ctg agt	1344
Leu Arg Lys His Asn Leu Asp Gly Pro Arg Leu Ala Ala Phe Leu Ser	
435 440 445	
agt aac gac tac caa ttg gga ctt gcc atc aag aag ttc tac agc ttc	1392
Ser Asn Asp Tyr Gln Leu Gly Leu Ala Ile Lys Lys Phe Tyr Ser Phe	
450 455 460	
cgc cac atc agc ttc cag gac ttt ttt cat gcc atg tct tac ctg gtg	1440
Arg His Ile Ser Phe Gln Asp Phe Phe His Ala Met Ser Tyr Leu Val	
465 470 475 480	
aaa gag gac caa agc cgg ctg ggg aag gag tcc cgc aga gaa gtg caa	1488
Lys Glu Asp Gln Ser Arg Leu Gly Lys Glu Ser Arg Arg Glu Val Gln	
485 490 495	
agg ctg ctg gag gta aag gag cag gaa ggg aat gat gag atg acc ctc	1536
Arg Leu Leu Glu Val Lys Glu Gln Glu Gly Asn Asp Glu Met Thr Leu	
500 505 510	
act atg cag ttt tta ctg gac atc tcg aaa aaa gac agc ttc tcg aac	1584
Thr Met Gln Phe Leu Leu Asp Ile Ser Lys Lys Asp Ser Phe Ser Asn	
515 520 525	
ttg gag ctc aag ttc tgc ttc aga att tct ccc tgt tta gcg cag gat	1632
Leu Glu Leu Lys Phe Cys Phe Arg Ile Ser Pro Cys Leu Ala Gln Asp	
530 535 540	
ctg aag cat ttt aaa gaa cag atg gaa tct atg aag cac aac agg acc	1680
Leu Lys His Phe Lys Glu Gln Met Glu Ser Met Lys His Asn Arg Thr	
545 550 555 560	
tgg gat ttg gaa ttc tcc ctg tat gaa gct aaa ata aag aat ctg gta	1728
Trp Asp Leu Glu Phe Ser Leu Tyr Glu Ala Lys Ile Lys Asn Leu Val	
565 570 575	
aaa ggt att cag atg aac aat gta tca ttc aag ata aaa cat tca aat	1776
Lys Gly Ile Gln Met Asn Asn Val Ser Phe Lys Lys Ile Lys His Ser Asn	
580 585 590	
gaa aag aaa tca cag agc cag aat tta ttt tct gtc aaa agc agc ttg	1824
Glu Lys Lys Ser Gln Ser Gln Asn Leu Phe Ser Val Lys Ser Ser Leu	
595 600 605	
agt cat gga cct aag gag gag caa aaa tgt cct tct gtc cat gga cag	1872
Ser His Gly Pro Lys Glu Glu Gln Lys Cys Pro Ser Val His Gly Gln	
610 615 620	

Fig. 6C



aag	gag	ggc	aaa	gat	aat	ata	gca	gga	aca	caa	aag	gaa	gct	tct	act	1920
Lys	Glu	Gly	Lys	Asp	Asn	Ile	Ala	Gly	Thr	Gln	Lys	Glu	Ala	Ser	Thr	
625					630					635					640	
gga	aaa	ggc	aga	ggg	aca	gag	gaa	aca	cca	aaa	aat	act	tac	ata	taa	1968
Gly	Lys	Gly	Arg	Gly	Thr	Glu	Glu	Thr	Pro	Lys	Asn	Thr	Tyr	Ile	*	
				645					650						655	

Fig. 6D

gcctgtgaat gatgcaatgg aaggtgtgct ggggtcgccc tgtgtcccgt gcataggagc	60
atctcagcct ccaggtcctc tcctttgggg cttacggcac cccc atg cta cga acc	116
Met Leu Arg Thr	
1	
gca ggc agg gac ggc ctc tgt cgc ctg tcc acc tac ttg gaa gaa ctc	164
Ala Gly Arg Asp Gly Leu Cys Arg Leu Ser Thr Tyr Leu Glu Glu Leu	
5 10 15 20	
gag gct gtg gaa ctg aag aag ttc aag tta tac ctg ggg acc gcg aca	212
Glu Ala Val Glu Leu Lys Lys Phe Lys Leu Tyr Leu Gly Thr Ala Thr	
25 30 35	
gag ctg gga gaa ggc aag atc ccc tgg gga agc atg gag ata gcc ggt	260
Glu Leu Gly Glu Gly Lys Ile Pro Trp Gly Ser Met Glu Ile Ala Gly	
40 45 50	
ccc ctg gaa atg gcc cag ctg ctc atc acc cac ttc ggg	299
Pro Leu Glu Met Ala Gln Leu Leu Ile Thr His Phe Gly	
55 60 65	

Fig. 7

atg cta cga acc gca ggc agg gac ggc ctc tgt cgc ctg tcc acc tac	48
Met Leu Arg Thr Ala Gly Arg Asp Gly Leu Cys Arg Leu Ser Thr Tyr	
1 5 10 15	
ttg gaa gaa ctc gag gct gtg gaa ctg aag aag ttc aag tta tac ctg	96
Leu Glu Glu Leu Glu Ala Val Glu Leu Lys Lys Phe Lys Leu Tyr Leu	
20 25 30	
ggg acc gcg aca gag ctg gga gaa ggc aag atc ccc tgg gga agc atg	144
Gly Thr Ala Thr Glu Leu Gly Glu Gly Lys Ile Pro Trp Gly Ser Met	
35 40 45	
gag aag gcc ggt ccc ctg gaa atg gcc cag ctg ctc atc acc cac ttc	192
Glu Lys Ala Gly Pro Leu Glu Met Ala Gln Leu Leu Ile Thr His Phe	
50 55 60	
ggg cca gag gag gcc tgg agg ttg gct ctc agc acc ttt gag cgg ata	240
Gly Pro Glu Glu Ala Trp Arg Leu Ala Leu Ser Thr Phe Glu Arg Ile	
65 70 75 80	
aac agg aag gac ctg tgg gag aga gga cag aga gag gac ctg gtg agg	288
Asn Arg Lys Asp Leu Trp Glu Arg Gly Gln Arg Glu Asp Leu Val Arg	
85 90 95	
gat acc cca cct ggt ggc ccg tcc tca ctt ggg aac cag tca aca tgc	336
Asp Thr Pro Pro Gly Gly Pro Ser Ser Leu Gly Asn Gln Ser Thr Cys	
100 105 110	
ctt ctg gaa gtc tct ctt gtc act cca aga aaa gat ccc cag gaa acc	384
Leu Leu Glu Val Ser Leu Val Thr Pro Arg Lys Asp Pro Gln Glu Thr	
115 120 125	
tac agg gac tat gtc cgc agg aaa ttc cgg ctc atg gaa gac cgc aat	432
Tyr Arg Asp Tyr Val Arg Arg Lys Phe Arg Leu Met Glu Asp Arg Asn	
130 135 140	
gcg cgc cta ggg gaa tgt gtc aac ctc agc cac cgg tac acc cgg ctc	480
Ala Arg Leu Gly Glu Cys Val Asn Leu Ser His Arg Tyr Thr Arg Leu	
145 150 155 160	
ctg ctg gtg aag gag cac tca aac ccc atg cag gtc cag cag cag ctt	528
Leu Leu Val Lys Glu His Ser Asn Pro Met Gln Val Gln Gln Gln Leu	
165 170 175	
ctg gac aca ggc cgg gga cac gcg agg acc gtg gga cac cag gct agc	576
Leu Asp Thr Gly Arg Gly His Ala Arg Thr Val Gly His Gln Ala Ser	
180 185 190	
ccc atc aag ata gag acc ctc ttt gag cca gac gag gag cgc ccc gag	624
Pro Ile Lys Ile Glu Thr Leu Phe Glu Pro Asp Glu Glu Arg Pro Glu	
195 200 205	

Fig. 8A

cca ccg cgc acc gtg gtc atg caa ggc gcg gca ggg ata ggc aag tcc	672
Pro Pro Arg Thr Val Val Met Gln Gly Ala Ala Gly Ile Gly Lys Ser	
210 215 220	
atg ctg gca cac aag gtg atg ctg gac tgg gcg gac ggg aag ctc ttc	720
Met Leu Ala His Lys Val Met Leu Asp Trp Ala Asp Gly Lys Leu Phe	
225 230 235 240	
caa ggc aga ttt gat tat ctc ttc tac atc aac tgc agg gag atg aac	768
Gln Gly Arg Phe Asp Tyr Leu Phe Tyr Ile Asn Cys Arg Glu Met Asn	
245 250 255	
cag agt gcc acg gaa tgc agc atg caa gac ctc atc ttc agc tgc tgg	816
Gln Ser Ala Thr Glu Cys Ser Met Gln Asp Leu Ile Phe Ser Cys Trp	
260 265 270	
cct gag ccc agc gcg cct ctc cag gag ctc atc cga gtt ccc gag cgc	864
Pro Glu Pro Ser Ala Pro Leu Gln Glu Leu Ile Arg Val Pro Glu Arg	
275 280 285	
ctc ctt ttc atc atc gac ggc ttc gat gag ctc aag cct tct ttc cac	912
Leu Leu Phe Ile Ile Asp Gly Phe Asp Glu Leu Lys Pro Ser Phe His	
290 295 300	
gat cct cag gga ccc tgg tgc ctc tgc tgg gag gag aaa cgg ccc acg	960
Asp Pro Gln Gly Pro Trp Cys Leu Cys Trp Glu Glu Lys Arg Pro Thr	
305 310 315 320	
gag ctg ctt ctt aac agc tta att cgg aag aag ctg ctc cct gag cta	1008
Glu Leu Leu Leu Asn Ser Leu Ile Arg Lys Lys Leu Leu Pro Glu Leu	
325 330 335	
tct ttg ctc atc acc aca cgg ccc acg gct ttg gag aag ctc cac cgt	1056
Ser Leu Leu Ile Thr Thr Arg Pro Thr Ala Leu Glu Lys Leu His Arg	
340 345 350	
ctg ctg gag cac ccc agg cat gtg gag atc ctg ggc ttc tct gag gca	1104
Leu Leu Glu His Pro Arg His Val Glu Ile Leu Gly Phe Ser Glu Ala	
355 360 365	
gaa agg aag gaa tac ttc tac aag tat ttc cac aat gca gag cag gcg	1152
Glu Arg Lys Glu Tyr Phe Tyr Lys Tyr Phe His Asn Ala Glu Gln Ala	
370 375 380	
ggc caa gtc ttc aat tac gtg agg gac aac gag cct ctc ttc acc atg	1200
Gly Gln Val Phe Asn Tyr Val Arg Asp Asn Glu Pro Leu Phe Thr Met	
385 390 395 400	
tgc ttc gtc ccc ctg gtg tgc tgg gtg gtg tgt acc tgc ctc cag cag	1248
Cys Phe Val Pro Leu Val Cys Trp Val Val Cys Thr Cys Leu Gln Gln	
405 410 415	

Fig. 8B

cag ctg gag ggt ggg ggg ctg ttg aga cag acg tcc agg acc acc act	1296
Gln Leu Glu Gly Gly Gly Leu Leu Arg Gln Thr Ser Arg Thr Thr Thr	
420 425 430	
gca gtg tac atg ctc tac ctg ctg agt ctg atg caa ccc aag ccg ggg	1344
Ala Val Tyr Met Leu Tyr Leu Leu Ser Leu Met Gln Pro Lys Pro Gly	
435 440 445	
gcc ccg cgc ctc cag ccc cca ccc aac cag aga ggg ttg tgc tcc ttg	1392
Ala Pro Arg Leu Gln Pro Pro Pro Asn Gln Arg Gly Leu Cys Ser Leu	
450 455 460	
gcg gca gat ggg ctc tgg aat cag aaa atc cta ttt gag gag cag gac	1440
Ala Ala Asp Gly Leu Trp Asn Gln Lys Ile Leu Phe Glu Glu Gln Asp	
465 470 475 480	
ctc cgg aag cac ggc cta gac ggg gaa gac gtc tct gcc ttc ctc aac	1488
Leu Arg Lys His Gly Leu Asp Gly Glu Asp Val Ser Ala Phe Leu Asn	
485 490 495	
atg aac atc ttc cag aag gac atc aac tgt gag agg tac tac agc ttc	1536
Met Asn Ile Phe Gln Lys Asp Ile Asn Cys Glu Arg Tyr Tyr Ser Phe	
500 505 510	
atc cac ttg agt ttc cag gaa ttc ttt gca gct atg tac tat atc ctg	1584
Ile His Leu Ser Phe Gln Glu Phe Phe Ala Ala Met Tyr Tyr Ile Leu	
515 520 525	
gac gag ggg gag ggc ggg gca ggc cca gac cag gac gtg acc agg ctg	1632
Asp Glu Gly Glu Gly Glu Ala Gly Pro Asp Gln Asp Val Thr Arg Leu	
530 535 540	
ttg acc gag tac gcg ttt tct gaa agg agc ttc ctg gca ctc acc agc	1680
Leu Thr Glu Tyr Ala Phe Ser Glu Arg Ser Phe Leu Ala Leu Thr Ser	
545 550 555 560	
cgc ttc ctg ttt gga ctc ctg aac gag gag acc agg agc cac ctg gag	1728
Arg Phe Leu Phe Gly Leu Leu Asn Glu Glu Thr Arg Ser His Leu Glu	
565 570 575	
aag agt ctc tgc tgg aag gtc tgc ccg cac atc aag atg gac ctg ttg	1776
Lys Ser Leu Cys Trp Lys Val Ser Pro His Ile Lys Met Asp Leu Leu	
580 585 590	
cag tgg atc caa agc aaa gct cag agc gac ggc tcc acc ctg cag cag	1824
Gln Trp Ile Gln Ser Lys Ala Gln Ser Asp Gly Ser Thr Leu Gln Gln	
595 600 605	
ggc tcc ttg gag ttc ttc agc tgc ttg tac gag atc cag gag gag gag	1872
Gly Ser Leu Glu Phe Phe Ser Cys Leu Tyr Glu Ile Gln Glu Glu Glu	
610 615 620	

Fig. 8C

ttt atc cag cag gcc ctg agc cac ttc cag gtg atc gtg gtc agc aac	1920
Phe Ile Gln Gln Ala Leu Ser His Phe Gln Val Ile Val Val Ser Asn	
625 630 635 640	
att gcc tcc aag atg gag cac atg gtc tcc tcg ttc tgt ctg aag cgc	1968
Ile Ala Ser Lys Met Glu His Met Val Ser Ser Phe Cys Leu Lys Arg	
645 650 655	
tgc agg agc gcc cag gtg ctg cac ttg tat ggc gcc acc tac agc gcg	2016
Cys Arg Ser Ala Gln Val Leu His Leu Tyr Gly Ala Thr Tyr Ser Ala	
660 665 670	
gac ggg gaa gac cgc gcg agg tgc tcc gca gga gcg cac acg ctg ttg	2064
Asp Gly Glu Asp Arg Ala Arg Cys Ser Ala Gly Ala His Thr Leu Leu	
675 680 685	
gtg cag cta cca gag agg acc gtt ctg ctg gac gcc tac agt gaa cat	2112
Val Gln Leu Pro Glu Arg Thr Val Leu Leu Asp Ala Tyr Ser Glu His	
690 695 700	
ctg gca gcg gcc ctg tgc acc aat cca aac ctg ata gag ctg tct ctg	2160
Leu Ala Ala Ala Leu Cys Thr Asn Pro Asn Leu Ile Glu Leu Ser Leu	
705 710 715 720	
tac cga aat gcc ctg ggc agc cgg ggg gtg aag ctg ctc tgt caa gga	2208
Tyr Arg Asn Ala Leu Gly Ser Arg Gly Val Lys Leu Leu Cys Gln Gly	
725 730 735	
ctc aga cac ccc aac tgc aaa ctt cag aac ctg agg ctg aag agg tgc	2256
Leu Arg His Pro Asn Cys Lys Leu Gln Asn Leu Arg Leu Lys Arg Cys	
740 745 750	
cgc atc tcc agc tca gcc tgc gag gac ctc tct gca gct ctc ata gcc	2304
Arg Ile Ser Ser Ser Ala Cys Glu Asp Leu Ser Ala Ala Leu Ile Ala	
755 760 765	
aat aag aat ttg aca agg atg gat ctc agt ggc aac ggc gtt gga ttc	2352
Asn Lys Asn Leu Thr Arg Met Asp Leu Ser Gly Asn Gly Val Gly Phe	
770 775 780	
cca ggc atg atg ctg ctt tgc gag ggc ctg cgg cat ccc caa tgc agg	2400
Pro Gly Met Met Leu Leu Cys Glu Gly Leu Arg His Pro Gln Cys Arg	
785 790 795 800	
ctg cag atg att cag ttg agg aag tgt cag ctg gag tcc ggg gct tgt	2448
Leu Gln Met Ile Gln Leu Arg Lys Cys Gln Leu Glu Ser Gly Ala Cys	
805 810 815	
cag gag atg gct tct gtg ctt ggc acc aac cca cat ctg gtt gag ttg	2496
Gln Glu Met Ala Ser Val Leu Gly Thr Asn Pro His Leu Val Glu Leu	
820 825 830	

Fig. 8D

gac ctg aca gga aat gca ctg gag gat ttg ggc ctg agg tta cta tgc Asp Leu Thr Gly Asn Ala Leu Glu Asp Leu Gly Leu Arg Leu Leu Cys 835 840 845	2544
cag gga ctg agg cac cca gtc tgc aga cta cgg act ttg tgg ctg aag Gln Gly Leu Arg His Pro Val Cys Arg Leu Arg Thr Leu Trp Leu Lys 850 855 860	2592
atc tgc cgc ctc act gct gct gcc tgt gac gag ctg gcc tca act ctc Ile Cys Arg Leu Thr Ala Ala Ala Cys Asp Glu Leu Ala Ser Thr Leu 865 870 875 880	2640
agt gtg aac cag agc ctg aga gag ctg gac ctg agc ctg aat gag ctg Ser Val Asn Gln Ser Leu Arg Glu Leu Asp Leu Ser Leu Asn Glu Leu 885 890 895	2688
ggg gac ctc ggg gtg ctg ctg ctg tgt gag ggc ctc agg cat ccc acg Gly Asp Leu Gly Val Leu Leu Leu Cys Glu Gly Leu Arg His Pro Thr 900 905 910	2736
tgc aag ctc cag acc ctg cgg ttg ggc atc tgc cgg ctg ggc tct gcc Cys Lys Leu Gln Thr Leu Arg Leu Gly Ile Cys Arg Leu Gly Ser Ala 915 920 925	2784
gcc tgt gag ggt ctt tct gtg gtg ctc cag gcc aac cac aac ctc cgg Ala Cys Glu Gly Leu Ser Val Val Leu Gln Ala Asn His Asn Leu Arg 930 935 940	2832
gag ctg gac ttg agt ttc aac gac ctg gga gac tgg ggc ctg tgg ttg Glu Leu Asp Leu Ser Phe Asn Asp Leu Gly Asp Trp Gly Leu Trp Leu 945 950 955 960	2880
ctg gct gag ggg ctg caa cat ccc gcc tgc aga ctc cag aaa ctg tgg Leu Ala Glu Gly Leu Gln His Pro Ala Cys Arg Leu Gln Lys Leu Trp 965 970 975	2928
ctg gat agc tgt ggc ctc aca gcc aag gct tgt gag aat ctt tac ttc Leu Asp Ser Cys Gly Leu Thr Ala Lys Ala Cys Glu Asn Leu Tyr Phe 980 985 990	2976
acc ctg ggg atc aac cag acc ttg acc gac ctt tac ctg acc aac aac Thr Leu Gly Ile Asn Gln Thr Leu Thr Asp Leu Tyr Leu Thr Asn Asn 995 1000 1005	3024
gcc cta ggg gac aca ggt gtc cga ctg ctt tgc aag cgg ctg agc cat Ala Leu Gly Asp Thr Gly Val Arg Leu Leu Cys Lys Arg Leu Ser His 1010 1015 1020	3072
cct ggc tgc aaa ctc cga gtc ctc tgg tta ttt ggg atg gac ctg aat Pro Gly Cys Lys Leu Arg Val Leu Trp Leu Phe Gly Met Asp Leu Asn 1025 1030 1035 1040	3120

Fig. 8E





atg agt gac gtg aat cca ccc tct gac acc ccc att ccc ttt tca tcc	48
Met Ser Asp Val Asn Pro Pro Ser Asp Thr Pro Ile Pro Phe Ser Ser	
1 5 10 15	
tcc tcc act cac agt tct cat att ctg ccc tgg aca ttc tct tgc tac	96
Ser Ser Thr His Ser Ser His Ile Leu Pro Trp Thr Phe Ser Cys Tyr	
20 25 30	
ccc ggc tcc cca tgt gaa aat ggg gtc atg ctg tac atg aga aac gtg	144
Pro Gly Ser Pro Cys Glu Asn Gly Val Met Leu Tyr Met Arg Asn Val	
35 40 45	
agc cat gag gag cta caa cgg ttc aag cag ctc tta ctg act gag ctc	192
Ser His Glu Glu Leu Gln Arg Phe Lys Gln Leu Leu Leu Thr Glu Leu	
50 55 60	
agt act ggc acc atg ccc atc acc tgg gac cag gtc gag aca gcc agc	240
Ser Thr Gly Thr Met Pro Ile Thr Trp Asp Gln Val Glu Thr Ala Ser	
65 70 75 80	
tgg gca gag gtg gtt cat ctc ttg ata gag cgt ttc cct gga cga cgc	288
Trp Ala Glu Val Val His Leu Leu Ile Glu Arg Phe Pro Gly Arg Arg	
85 90 95	
gct tgg gat gtg act tcg aac atc ttt gcc att atg aac tgt gat aaa	336
Ala Trp Asp Val Thr Ser Asn Ile Phe Ala Ile Met Asn Cys Asp Lys	
100 105 110	
att ggg gtc ccg cag tta ttc tac tgt ctg cat gaa atc ccg gag gaa	384
Ile Gly Val Pro Gln Leu Phe Tyr Cys Leu His Glu Ile Arg Glu Glu	
115 120 125	
gcc ttt gta agc caa gcc tta aat gat tat cat aaa gtt gtc ttg aga	432
Ala Phe Val Ser Gln Ala Leu Asn Asp Tyr His Lys Val Val Leu Arg	
130 135 140	
att ggc aac aac aaa gaa gtt caa gtg tct gct ttt tgc ctg aag cgg	480
Ile Gly Asn Asn Lys Glu Val Gln Val Ser Ala Phe Cys Leu Lys Arg	
145 150 155 160	
tgt caa tat ttg cat gag gtg gaa ctg acc gtc acc ctg aac ttc atg	528
Cys Gln Tyr Leu His Glu Val Glu Leu Thr Val Thr Leu Asn Phe Met	
165 170 175	
aac gtg tgg aag ctc agc tcc agc tcc cat cct ggc tct gac cta agg	576
Asn Val Trp Lys Leu Ser Ser Ser Ser His Pro Gly Ser Asp Leu Arg	
180 185 190	
cgt gtg aat agc acc atg ttg aac cag gac tta atc ggt gtt ttg acg	624
Arg Val Asn Ser Thr Met Leu Asn Gln Asp Leu Ile Gly Val Leu Thr	
195 200 205	

Fig. 9A

ggg aac cag cat ctg aga tac ttg gaa ata caa cat gtg gaa gtg gag Gly Asn Gln His Leu Arg Tyr Leu Glu Ile Gln His Val Glu Val Glu 210 215 220	672
tcc aag gct gtg aag ctt cta tgc agg gcg ctg aga tcc ccc cgg tgc Ser Lys Ala Val Lys Leu Leu Cys Arg Ala Leu Arg Ser Pro Arg Cys 225 230 235 240	720
cgt ctg cag tgt ctc agg ttg gaa gac tgc ttg gcc acc cct aga att Arg Leu Gln Cys Leu Arg Leu Glu Asp Cys Leu Ala Thr Pro Arg Ile 245 250 255	768
tgg act gat ctt ggc aat aat ctt caa ggt aac ggg cat cta aag act Trp Thr Asp Leu Gly Asn Asn Leu Gln Gly Asn Gly His Leu Lys Thr 260 265 270	816
ctc ata cta aga aaa aac tcc ctg gag aac tgt ggg gcg tat tac ctg Leu Ile Leu Arg Lys Asn Ser Leu Glu Asn Cys Gly Ala Tyr Tyr Leu 275 280 285	864
tct gtg gcc cag ctg gag agg ctg tcg cag agt aag atg ctg acc cac Ser Val Ala Gln Leu Glu Arg Leu Ser Gln Ser Lys Met Leu Thr His 290 295 300	912
ctg agc ttg gca gaa aac gcc ttg aaa gat gaa ggg gcc aag cat att Leu Ser Leu Ala Glu Asn Ala Leu Lys Asp Glu Gly Ala Lys His Ile 305 310 315 320	960
tgg aat gcc ctg cca cac ctg aga tgt cct ctg cag agg ctg gta ctg Trp Asn Ala Leu Pro His Leu Arg Cys Pro Leu Gln Arg Leu Val Leu 325 330 335	1008
aga aag tgt gac ttg acc ttt aat tgc tgt cag gat atg atc tct gcg Arg Lys Cys Asp Leu Thr Phe Asn Cys Cys Gln Asp Met Ile Ser Ala 340 345 350	1056
ctc tgt aaa aat aaa acc ctg aaa agt ctt gac cta agt ttt aat agc Leu Cys Lys Asn Lys Thr Leu Lys Ser Leu Asp Leu Ser Phe Asn Ser 355 360 365	1104
ctg aag gat gat ggg gtg atc ctg ctg tgt gag gcc ctg aag aac cct Leu Lys Asp Asp Gly Val Ile Leu Leu Cys Glu Ala Leu Lys Asn Pro 370 375 380	1152
gac tgt aca tta cag atc ctg gag ctg gaa aac tgc ctg ttt acc tcc Asp Cys Thr Leu Gln Ile Leu Glu Leu Glu Asn Cys Leu Phe Thr Ser 385 390 395 400	1200
atc tgc tgc cag gcc atg gct tcc atg ctc cgc aaa aac caa cat ctg Ile Cys Cys Gln Ala Met Ala Ser Met Leu Arg Lys Asn Gln His Leu 405 410 415	1248

Fig. 9B

aga cat ctg gac ttg agc aag aat gcg att gga gtc tat ggt att ctg	1296
Arg His Leu Asp Leu Ser Lys Asn Ala Ile Gly Val Tyr Gly Ile Leu	
420 425 430	
acc ttg tgc gag gcc ttc tca agc caa aag aag aga gaa gag gtc att	1344
Thr Leu Cys Glu Ala Phe Ser Ser Gln Lys Lys Arg Glu Glu Val Ile	
435 440 445	
ttc tgt att cct gcc tgg act cga ata act agc ttc tcc cca act cct	1392
Phe Cys Ile Pro Ala Trp Thr Arg Ile Thr Ser Phe Ser Pro Thr Pro	
450 455 460	
cac cca ccc gac ttc acg gga aaa agt gac tgc cta tcc cag att aat	1440
His Pro Pro Asp Phe Thr Gly Lys Ser Asp Cys Leu Ser Gln Ile Asn	
465 470 475 480	
cct tag	1446
Pro *	

Fig. 9C

atg gca gat tca tca tca tct tct ttc ttt cct gat ttt ggg ctg cta	48
Met Ala Asp Ser Ser Ser Ser Ser Phe Phe Pro Asp Phe Gly Leu Leu	
1 5 10 15	
ttg tat ttg gag gag cta aac aaa gag gaa tta aat aca ttc aag tta	96
Leu Tyr Leu Glu Glu Leu Asn Lys Glu Glu Leu Asn Thr Phe Lys Leu	
20 25 30	
ttc cta aag gag acc atg gaa cct gag cat ggc ctg aca ccc tgg act	144
Phe Leu Lys Glu Thr Met Glu Pro Glu His Gly Leu Thr Pro Trp Thr	
35 40 45	
gaa gtg aag aag gcc agg cgg gag gac ctg gcc aat ttg atg aag aaa	192
Glu Val Lys Lys Ala Arg Arg Glu Asp Leu Ala Asn Leu Met Lys Lys	
50 55 60	
tat tat cca gga gag aaa gcc tgg agt gtg tct ctc aaa atc ttt ggc	240
Tyr Tyr Pro Gly Glu Lys Ala Trp Ser Val Ser Leu Lys Ile Phe Gly	
65 70 75 80	
aag atg aac ctg aag gat ctg tgt gag aga gcg aaa gaa gag atc aac	288
Lys Met Asn Leu Lys Asp Leu Cys Glu Arg Ala Lys Glu Glu Ile Asn	
85 90 95	
tgg tcg gcc cag act ata gga cca gat gat gcc aag gct gga gag aca	336
Trp Ser Ala Gln Thr Ile Gly Pro Asp Asp Ala Lys Ala Gly Glu Thr	
100 105 110	
caa gaa gat cag gag gca gtg ctg ggt gat gga aca gaa tac aga aat	384
Gln Glu Asp Gln Glu Ala Val Leu Gly Asp Gly Thr Glu Tyr Arg Asn	
115 120 125	
aga ata aag gaa aaa ttt tgc atc act tgg gac aag aag tct ttg gct	432
Arg Ile Lys Glu Lys Phe Cys Ile Thr Trp Asp Lys Lys Ser Leu Ala	
130 135 140	
gga aag cct gaa gat ttc cat cat gga att gca gag aaa gat aga aaa	480
Gly Lys Pro Glu Asp Phe His His Gly Ile Ala Glu Lys Asp Arg Lys	
145 150 155 160	
ctg ttg gaa cac ttg ttt gat gtg gat gtc aaa acc ggt gca cag cca	528
Leu Leu Glu His Leu Phe Asp Val Asp Val Lys Thr Gly Ala Gln Pro	
165 170 175	
cag atc gtg gtg ctt cag gga gct gct gga gtt ggg aaa aca acc ttg	576
Gln Ile Val Val Leu Gln Gly Ala Ala Gly Val Gly Lys Thr Thr Leu	
180 185 190	
gtg aga aag gca atg tta gat tgg gca gag ggc agt ctc tac cag cag	624
Val Arg Lys Ala Met Leu Asp Trp Ala Glu Gly Ser Leu Tyr Gln Gln	
195 200 205	

Fig. 10A

agg ttt aag tat gtt ttt tat ctc aat ggg aga gaa att aac cag ctg Arg Phe Lys Tyr Val Phe Tyr Leu Asn Gly Arg Glu Ile Asn Gln Leu 210 215 220	672
aaa gag aga agc ttt gct caa ttg ata tca aag gac tgg ccc agc aca Lys Glu Arg Ser Phe Ala Gln Leu Ile Ser Lys Asp Trp Pro Ser Thr 225 230 235 240	720
gaa ggc ccc att gaa gaa atc atg tac cag cca agt agc ctc ttg ttt Glu Gly Pro Ile Glu Glu Ile Met Tyr Gln Pro Ser Ser Leu Leu Phe 245 250 255	768
att att gac agt ttc gat gaa ctg aac ttt gcc ttt gaa gaa cct gag Ile Ile Asp Ser Phe Asp Glu Leu Asn Phe Ala Phe Glu Glu Pro Glu 260 265 270	816
ttt gca ctg tgc gaa gac tgg acc caa gaa cac cca gtg tcc ttc ctc Phe Ala Leu Cys Glu Asp Trp Thr Gln Glu His Pro Val Ser Phe Leu 275 280 285	864
atg agt agt ttg ctg agg aaa gtg atg ctc cct gag gca tcc tta ttg Met Ser Ser Leu Leu Arg Lys Val Met Leu Pro Glu Ala Ser Leu Leu 290 295 300	912
gtg aca aca aga ctc aca act tct aag aga cta aag cag ttg ttg aag Val Thr Thr Arg Leu Thr Thr Ser Lys Arg Leu Lys Gln Leu Leu Lys 305 310 315 320	960
aat cac cat tat gta gag cta cta gga atg tct gag gat gca aga gag Asn His His Tyr Val Glu Leu Leu Gly Met Ser Glu Asp Ala Arg Glu 325 330 335	1008
gag tat att tac cag ttt ttt gaa gat aag agg tgg gcc atg aaa gta Glu Tyr Ile Tyr Gln Phe Phe Glu Asp Lys Arg Trp Ala Met Lys Val 340 345 350	1056
ttc agt tca cta aaa agc aat gag atg ctg ttt agc atg tgc caa gtc Phe Ser Ser Leu Lys Ser Asn Glu Met Leu Phe Ser Met Cys Gln Val 355 360 365	1104
ccc cta gtg tgc tgg gcc gct tgt act tgt ctg aag cag caa atg gag Pro Leu Val Cys Trp Ala Ala Cys Thr Cys Leu Lys Gln Gln Met Glu 370 375 380	1152
aag ggt ggt gat gtc aca ttg acc tgc caa aca acc aca gct ctg ttt Lys Gly Gly Asp Val Thr Leu Thr Cys Gln Thr Thr Thr Ala Leu Phe 385 390 395 400	1200
acc tgc tat att tct agc ttg ttc aca cca gta gat gga ggc tct cct Thr Cys Tyr Ile Ser Ser Leu Phe Thr Pro Val Asp Gly Gly Ser Pro 405 410 415	1248

Fig. 10B





ctc	caa	caa	agg	agg	cca	ttg	aag	ccg	tta	aga	ccg	ggt	cag	gtg	aac	2544
Leu	Gln	Gln	Arg	Arg	Pro	Leu	Lys	Pro	Leu	Arg	Pro	Gly	Gln	Val	Asn	
	835						840					845				
agg	aag	tta	aag	act	gaa	aag	gag	aca	caa	aac	tgc	cga	ctt	tcc	cga	2592
Arg	Lys	Leu	Lys	Thr	Glu	Lys	Glu	Thr	Gln	Asn	Cys	Arg	Leu	Ser	Arg	
	850					855					860					
cgg	cga	att	ggc	cct	ctg	gaa	aca	gcc	gac	caa	tca	cag	gca	gca	ggg	2640
Arg	Arg	Ile	Gly	Pro	Leu	Glu	Thr	Ala	Asp	Gln	Ser	Gln	Ala	Ala	Gly	
865					870					875					880	
gcg	cgc	cct	gca	gcg	ggg	ctc	cgg	ctg	cgg	ttc	cgt	gga	ctc	ggc	gac	2688
Ala	Arg	Pro	Ala	Ala	Gly	Leu	Arg	Leu	Arg	Phe	Arg	Gly	Leu	Gly	Asp	
			885					890						895		
tag																2691
*																

Fig. 10E



ggcacgagga tttatttatt gttcctggtc actgtctctt tgaggattgg tatctctgct	60
ccagaaaaag atg gca gcc tct ttc ttc tct gat ttt ggt ctt atg tgg tat	111
Met Ala Ala Ser Phe Phe Ser Asp Phe Gly Leu Met Trp Tyr	
1 5 10	
ctg gag gag ctc aaa aag gag gag ttc agg aaa ttt aaa gaa cat ctc	159
Leu Glu Glu Leu Lys Lys Glu Glu Phe Arg Lys Phe Lys Glu His Leu	
15 20 25 30	
aag caa atg act ttg cag ctt gaa ctc aag cag att ccc tgg act gag	207
Lys Gln Met Thr Leu Gln Leu Glu Leu Lys Gln Ile Pro Trp Thr Glu	
35 40 45	
gtc aaa aaa gca tcc cgg gaa gaa ctt gca aac ctc ttg atc aag cac	255
Val Lys Lys Ala Ser Arg Glu Glu Leu Ala Asn Leu Leu Ile Lys His	
50 55 60	
tat gaa gaa caa caa gct tgg aac ata acc tta aga atc ttt caa aag	303
Tyr Glu Glu Gln Gln Ala Trp Asn Ile Thr Leu Arg Ile Phe Gln Lys	
65 70 75	
atg gat aga aag gat ctc tgc atg aag gtc atg agg gag aga aca gga	351
Met Asp Arg Lys Asp Leu Cys Met Lys Val Met Arg Glu Arg Thr Gly	
80 85 90	
tac aca aag acc tat caa gct cac gca aag cag aaa ttc agc cgc tta	399
Tyr Thr Lys Thr Tyr Gln Ala His Ala Lys Gln Lys Phe Ser Arg Leu	
95 100 105 110	
tgg tcc agc aag tct gtc act gag att cac cta tac ttt gag gag gaa	447
Trp Ser Ser Lys Ser Val Thr Glu Ile His Leu Tyr Phe Glu Glu Glu	
115 120 125	
gtc aag caa gaa gaa tgt gac cat ttg gac cgc ctt ttt gct ccc aag	495
Val Lys Gln Glu Glu Cys Asp His Leu Asp Arg Leu Phe Ala Pro Lys	
130 135 140	
gaa act ggg aaa cag cca cgt aca gtg att att caa gga cca caa gga	543
Glu Thr Gly Lys Gln Pro Arg Thr Val Ile Ile Gln Gly Pro Gln Gly	
145 150 155	
att gga aaa acg aca ctc ctg atg aag ctg atg atg gcc tgg tcg gac	591
Ile Gly Lys Thr Thr Leu Leu Met Lys Leu Met Met Ala Trp Ser Asp	
160 165 170	
aac aag atc ttt cgg gat agg ttc ctg tac acg ttc tat ttc tgc tgc	639
Asn Lys Ile Phe Arg Asp Arg Phe Leu Tyr Thr Phe Tyr Phe Cys Cys	
175 180 185 190	

Fig. 11A

aga gaa ctg agg gag ttg ccg cca acg agt ttg gct gac ttg att tcc	687
Arg Glu Leu Arg Glu Leu Pro Pro Thr Ser Leu Ala Asp Leu Ile Ser	
195 200 205	
aga gag tgg cct gac ccc gct gct cct ata aca gag atc gtg tct caa	735
Arg Glu Trp Pro Asp Pro Ala Ala Pro Ile Thr Glu Ile Val Ser Gln	
210 215 220	
ccg gag aga ctc ttg ttc gtc atc gac agc ttc gaa gag ctg cag ggc	783
Pro Glu Arg Leu Leu Phe Val Ile Asp Ser Phe Glu Glu Leu Gln Gly	
225 230 235	
ggc ttg aac gaa ccc gat tgc gat ctg tgt ggt gac ttg atg gag aaa	831
Gly Leu Asn Glu Pro Asp Ser Asp Leu Cys Gly Asp Leu Met Glu Lys	
240 245 250	
cgg ccg gtg cag gtg ctt ctg agc agt ttg ctg agg aag aag atg ctc	879
Arg Pro Val Gln Val Leu Leu Ser Ser Leu Leu Arg Lys Lys Met Leu	
255 260 265 270	
ccg gag gcc tcc ctg ctc atc gcc atc aaa ccc gtg tgc ccg aag gag	927
Pro Glu Ala Ser Leu Leu Ile Ala Ile Lys Pro Val Cys Pro Lys Glu	
275 280 285	
ctc cgg gat cag gtg acg atc tca gaa atc tac cag ccc cgg gga ttc	975
Leu Arg Asp Gln Val Thr Ile Ser Glu Ile Tyr Gln Pro Arg Gly Phe	
290 295 300	
aac gag agt gat agg tta gtg tat ttc tgc tgt ttc ttc aaa gac ccg	1023
Asn Glu Ser Asp Arg Leu Val Tyr Phe Cys Cys Phe Phe Lys Asp Pro	
305 310 315	
aaa aga gcc atg gaa gcc ttc aat ctt gta aga gaa agt gaa cag ctg	1071
Lys Arg Ala Met Glu Ala Phe Asn Leu Val Arg Glu Ser Glu Gln Leu	
320 325 330	
ttt tcc ata tgc caa atc ccg ctc ctc tgc tgg atc ctg tgt acc agt	1119
Phe Ser Ile Cys Gln Ile Pro Leu Leu Cys Trp Ile Leu Cys Thr Ser	
335 340 345 350	
ctg aag caa gag atg cag aaa gga aaa gac ctg gcc ctg acc tgc cag	1167
Leu Lys Gln Glu Met Gln Lys Gly Lys Asp Leu Ala Leu Thr Cys Gln	
355 360 365	
agc act acc tct gtg tac tcc tct ttc gtc ttt aac ctg ttc aca cct	1215
Ser Thr Thr Ser Val Tyr Ser Ser Phe Val Phe Asn Leu Phe Thr Pro	
370 375 380	
gag ggt gcc gag ggc ccg act ccg caa acc cag cac cag ctg aag gcc	1263
Glu Gly Ala Glu Gly Pro Thr Pro Gln Thr Gln His Gln Leu Lys Ala	
385 390 395	

Fig. 11B

ctg Leu	tgc Cys 400	tcc Ser	ctg Leu	gct Ala	gca Ala 405	gag Glu 405	ggg Gly	atg Met	tgg Trp	aca Thr	gac Asp 410	aca Thr	ttt Phe	gag Glu	ttt Phe	1311
tgt Cys 415	gaa Glu	gac Asp	gac Asp	ctc Leu	cgg Arg 420	aga Arg	aat Asn	ggg Gly	gtt Val	gtt Val 425	gac Asp	gct Ala	gac Asp	atc Ile	cct Pro 430	1359
gcg Ala	ctg Leu	ctg Leu	ggc Gly	acc Thr 435	aag Lys	ata Ile	ctt Leu	ctg Leu	aag Lys 440	tac Tyr	ggg Gly	gag Glu	cgt Arg	gag Glu 445	agc Ser	1407
tcc Ser	tac Tyr	gtg Val	ttc Phe 450	ctc Leu	cac His	gtg Val	tgt Cys	atc Ile 455	cag Gln	gag Glu	ttc Phe	tgt Cys	gcc Ala 460	gcc Ala	ttg Leu	1455
ttc Phe	tat Tyr	ttg Leu 465	ctc Leu	aag Lys	agc Ser	cac His	ctt Leu 470	gat Asp	cat His	cct Pro	cac His	cca Pro 475	gct Ala	gtg Val	aga Arg	1503
tgt Cys 480	gta Val	cag Gln	gaa Glu	ttg Leu	cta Leu 485	gtt Val	gcc Ala	aat Asn	ttt Phe	gaa Glu 490	aaa Lys	gca Ala	agg Arg	aga Arg	gca Ala	1551
cat His 495	tgg Trp	att Ile	ttt Phe	ttg Leu	ggg Gly 500	tgt Cys	ttt Phe	cta Leu	act Thr	ggc Gly 505	ctt Leu	tta Leu	aat Asn	aaa Lys	aag Lys 510	1599
gaa Glu	caa Gln	gaa Glu	aaa Lys	ctg Leu 515	gat Asp	gcg Ala	ttt Phe	ttt Phe	ggc Gly 520	ttc Phe	caa Gln	ctg Leu	tcc Ser	caa Gln 525	gag Glu	1647
ata Ile	aag Lys	cag Gln	caa Gln 530	att Ile	cac His	cag Gln	tgc Cys	ctg Leu 535	aag Lys	agc Ser	tta Leu	ggg Gly	gag Glu 540	cgt Arg	ggc Gly	1695
aat Asn	cct Pro	cag Gln 545	gga Gly	cag Gln	gtg Val	gat Asp	tcc Ser 550	ttg Leu	gcg Ala	ata Ile	ttt Phe	tac Tyr 555	tgt Cys	ctc Leu	ttt Phe	1743
gaa Glu	atg Met 560	cag Gln	gat Asp	cct Pro	gcc Ala	ttt Phe 565	gtg Val	aag Lys	cag Gln	gca Ala 570	gtg Val	aac Asn	ctc Leu	ctc Leu	caa Gln	1791
gaa Glu 575	gct Ala	aac Asn	ttt Phe	cat His	att Ile 580	att Ile	gac Asp	aac Asn	gtg Val	gac Asp 585	ttg Leu	gtg Val	gtt Val	tct Ser	gcc Ala 590	1839
tac Tyr	tgc Cys	tta Leu	aaa Lys	tac Tyr 595	tgc Cys	tcc Ser	agc Ser	ttg Leu	agg Arg 600	aaa Lys	ctc Leu	tgt Cys	ttt Phe	tcc Ser 605	gtt Val	1887

Fig. 11C

caa aat gtc ttt aag aaa gag gat gaa cac agc tct acg tcg gat tac	1935
Gln Asn Val Phe Lys Lys Glu Asp Glu His Ser Ser Thr Ser Asp Tyr	
610 615 620	
agc ctc atc tgt tgg cat cac atc tgc tct gtg ctc acc acc agc ggg	1983
Ser Leu Ile Cys Trp His His Ile Cys Ser Val Leu Thr Thr Ser Gly	
625 630 635	
cac ctc aga gag ctc cag gtg cag gac agc acc ctc agc gag tcg acc	2031
His Leu Arg Glu Leu Gln Val Gln Asp Ser Thr Leu Ser Glu Ser Thr	
640 645 650	
ttt gtg acc tgg tgt aac cag ctg agg cat ccc agc tgt cgc ctt cag	2079
Phe Val Thr Trp Cys Asn Gln Leu Arg His Pro Ser Cys Arg Leu Gln	
655 660 665 670	
aag ctt gga ata aat aac gtt tcc ttt tct ggc cag agt gtt ctg ctc	2127
Lys Leu Gly Ile Asn Asn Val Ser Phe Ser Gly Gln Ser Val Leu Leu	
675 680 685	
ttt gag gtg ctc ttt tat cag cca gac ttg aaa tac ctg agc ttc acc	2175
Phe Glu Val Leu Phe Tyr Gln Pro Asp Leu Lys Tyr Leu Ser Phe Thr	
690 695 700	
ctc acg aaa ctc tct cgt gat gac atc agg tcc ctc tgt gat gcc ttg	2223
Leu Thr Lys Leu Ser Arg Asp Asp Ile Arg Ser Leu Cys Asp Ala Leu	
705 710 715	
aac tac cca gca ggc aac gtc aaa gag cta gcg ctg gta aat tgt cac	2271
Asn Tyr Pro Ala Gly Asn Val Lys Glu Leu Ala Leu Val Asn Cys His	
720 725 730	
ctc tca ccc att gat tgt gaa gtc ctt gct ggc ctt cta acc aac aac	2319
Leu Ser Pro Ile Asp Cys Glu Val Leu Ala Gly Leu Leu Thr Asn Asn	
735 740 745 750	
aag aag ctg acg tat ctg aat gta tcc tgc aac cag tta gac aca ggc	2367
Lys Lys Leu Thr Tyr Leu Asn Val Ser Cys Asn Gln Leu Asp Thr Gly	
755 760 765	
gtg ccc ctt ttg tgt gaa gcc ctg tgc agc cca gac acg gtc ctg gta	2415
Val Pro Leu Leu Cys Glu Ala Leu Cys Ser Pro Asp Thr Val Leu Val	
770 775 780	
tac ctg atg ttg gct ttc tgc cac ctc agc gag cag tgc tgc gaa tac	2463
Tyr Leu Met Leu Ala Phe Cys His Leu Ser Glu Gln Cys Cys Glu Tyr	
785 790 795	
atc tct gaa atg ctt ctg cgt aac aag agc gtg cgc tat cta gac ctc	2511
Ile Ser Glu Met Leu Leu Arg Asn Lys Ser Val Arg Tyr Leu Asp Leu	
800 805 810	

Fig. 11D

agt gcc aat gtc ctg aag gac gaa gga ctg aaa act ctc tgc gag gcc	2559
Ser Ala Asn Val Leu Lys Asp Glu Gly Leu Lys Thr Leu Cys Glu Ala	
815 820 825 830	
ttg aaa cat ccg gac tgc tgc ctg gat tca ctg tgt ttg gta aaa tgt	2607
Leu Lys His Pro Asp Cys Cys Leu Asp Ser Leu Cys Leu Val Lys Cys	
835 840 845	
ttt atc act gct gct ggc tgt gaa gac ctc gcc tct gct ctc atc agc	2655
Phe Ile Thr Ala Ala Gly Cys Glu Asp Leu Ala Ser Ala Leu Ile Ser	
850 855 860	
aat caa aac ctg aag att ctg caa att ggg tgc aat gaa atc gga gat	2703
Asn Gln Asn Leu Lys Ile Leu Gln Ile Gly Cys Asn Glu Ile Gly Asp	
865 870 875	
gtg ggt gtg cag ctg ttg tgt cgg gct ctg acg cat acg gat tgc cgc	2751
Val Gly Val Gln Leu Leu Cys Arg Ala Leu Thr His Thr Asp Cys Arg	
880 885 890	
tta gag att ctt ggg ttg gaa gaa tgt ggg tta acg agc acc tgc tgt	2799
Leu Glu Ile Leu Gly Leu Glu Glu Cys Gly Leu Thr Ser Thr Cys Cys	
895 900 905 910	
aag gat ctc gcg tct gtt ctc acc tgc agt aag acc ctg cag cag ctc	2847
Lys Asp Leu Ala Ser Val Leu Thr Cys Ser Lys Thr Leu Gln Gln Leu	
915 920 925	
aac ctg acc ttg aac acc ttg gac cac aca ggg gtg gtt gta ctc tgt	2895
Asn Leu Thr Leu Asn Thr Leu Asp His Thr Gly Val Val Val Leu Cys	
930 935 940	
gag gcc ctg aga cac cca gag tgt gcc ctg cag gtg ctc ggg ctg aga	2943
Glu Ala Leu Arg His Pro Glu Cys Ala Leu Gln Val Leu Gly Leu Arg	
945 950 955	
aaa act gat ttt gat gag gaa acc cag gca ctt ctg acg gct gag gaa	2991
Lys Thr Asp Phe Asp Glu Glu Thr Gln Ala Leu Leu Thr Ala Glu Glu	
960 965 970	
gag aga aat cct aac ctg acc atc aca gat gac tgt gac aca atc aca	3039
Glu Arg Asn Pro Asn Leu Thr Ile Thr Asp Asp Cys Asp Thr Ile Thr	
975 980 985 990	
agg gta gag atc tgattgcgag gaacctgggc tctgactcga acacctgcaa	3091
Arg Val Glu Ile	
aggacagggga ctgggaccgt tacttacatg acactgcacc caggagatac aaatcattga	3151
cactctgagt tgtgagattt ctggcacccc attcatagat ttgatatgat acacgtgggt	3211
tttatgtgct ctgtggcctt ggatgagtcga ctgaaaggcc ttcattggtct ctcggtctca	3271
caaggacctc ttaacccctc aataaagtgt tacatttcta aacattggaa aaaaaaaaaa	3331
aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaaaaa	3368

Fig. 11E